



JACOB RUSSELL | BUSINESS | MAR 13, 2023 | 7:00 AM

Helium's IoT-Crypto Network Is Barely Hanging On in Lebanon

People in the country hoped to earn a steady payout from Wi-Fi hot spots. But many are left holding useless hardware.

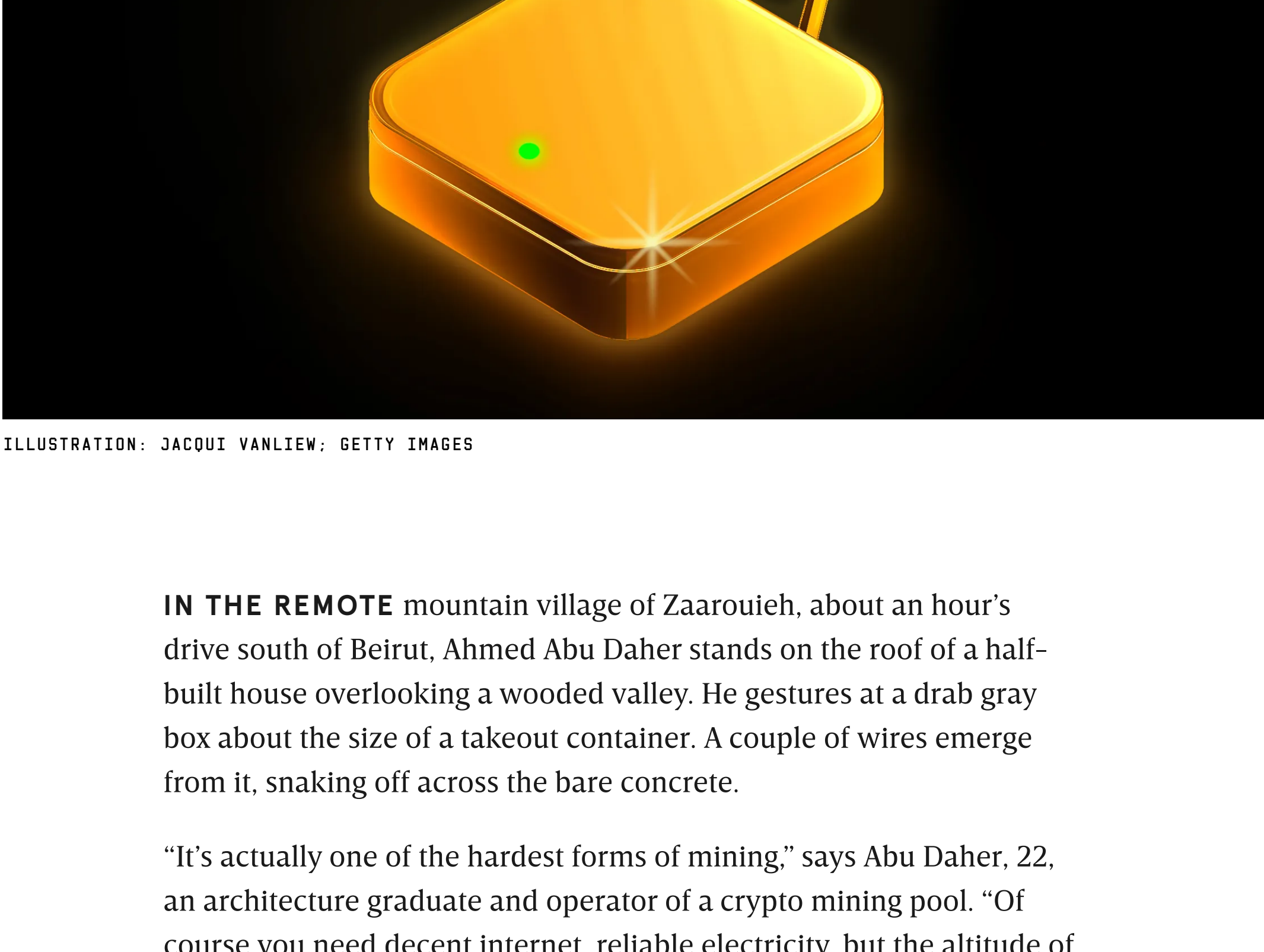


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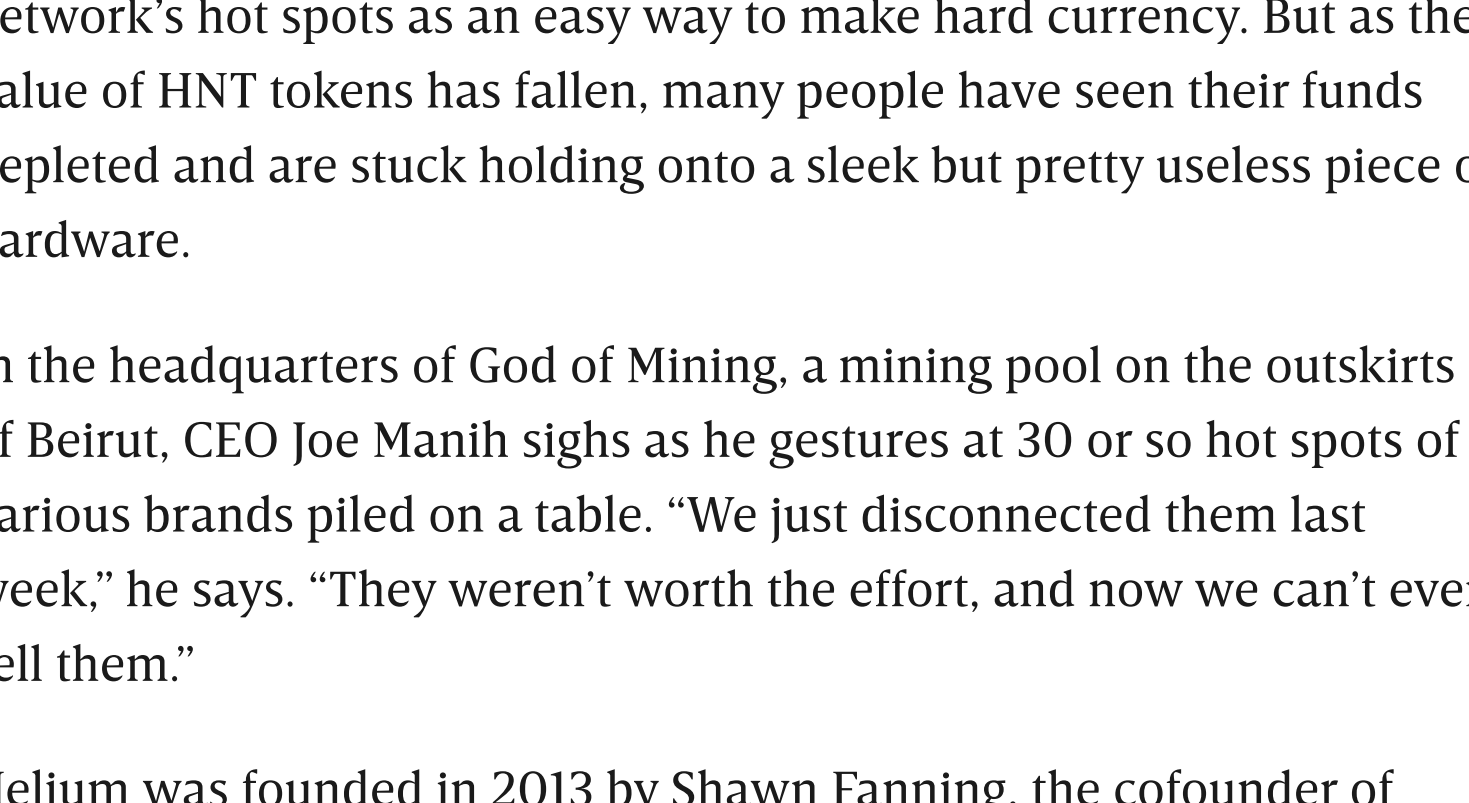
IN THE REMOTE mountain village of Zaarouleh, about an hour's drive south of Beirut, Ahmed Abu-Daher stands on the roof of a half-built house overlooking a wooded valley. He gestures at a drab gray box about the size of a takeout container. A couple of wires emerge from it, snaking off across the bare concrete.

"It's actually one of the hardest forms of mining," says Abu Daher, 22, an architecture graduate and operator of a crypto mining pool. "Of course you need decent internet, reliable electricity, but the altitude of the position is really important."

The box is a Helium hot spot. It transmits a long-range Wi-Fi signal and, in conjunction with hundreds of thousands of other hot spots, forms a global decentralized network designed for the internet of things. In return for installing and running it, Abu Daher receives a cryptocurrency called HNT. Looking over the lush hillsides as the sound of a geriatric diesel engine sputters in the distance, it's hard to imagine what "things" the little gray box might be communicating with.

Lebanon's economic free fall over the past few years, combined with a relatively high degree of tech literacy and a culture of hustle, has turned the country into a crucible of sorts for testing the utility of crypto assets. [Stablecoin use has boomed](#) as people attempt to circumvent a basket case of a banking system. [A community of ingenious miners continues to scrape profits out of the decrepit electricity grid](#), and some canny speculators have even managed to recover the savings they lost in the collapse of the banking system. Many turned to Helium.

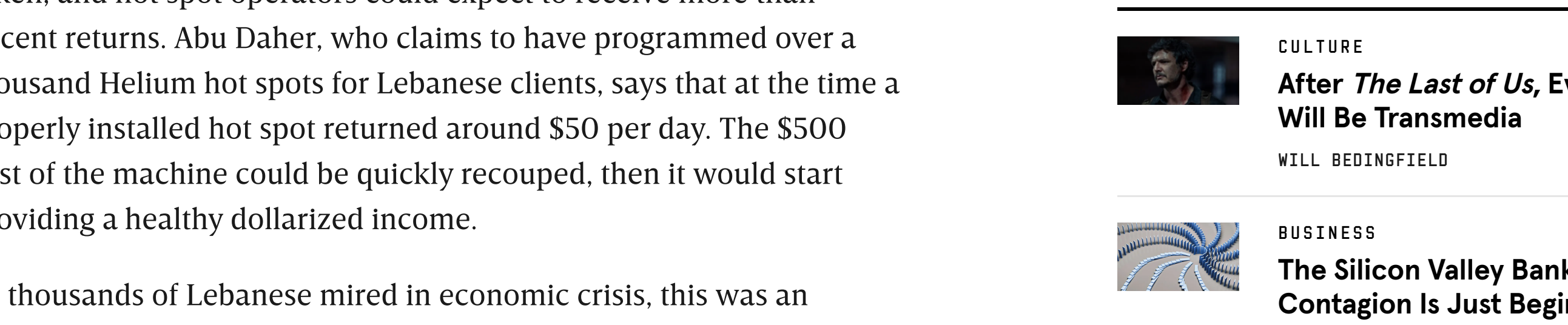
On the Helium Explorer, a dashboard displaying the location and activity of hot spots globally, Lebanon shows as an intense constellation of luminous green dots surrounded by almost-blank space. The [Hotspotly](#) app, which shows the state of the Helium network, records approximately 6,500 hot spots installed across Lebanon. In the rest of the Middle East, only the United Arab Emirates comes close to the levels of adoption seen in Lebanon, with around half that number.



Helium's promise to become the backbone network for smart devices (and [delivery of breakfast burritos by drone](#)) has little to do with its appeal in Lebanon. Lebanese citizens, many of them struggling as the country's economy tanked, simply saw the financial yield from the network's hot spots as an easy way to make hard currency. But as the value of HNT tokens has fallen, many people have seen their funds depleted and are stuck holding onto a sleek but pretty useless piece of hardware.

In the headquarters of God of Mining, a mining pool on the outskirts of Beirut, CEO Joe Manih sighs as he gestures at 30 or so hot spots of various brands piled on a table. "We just disconnected them last week," he says. "They weren't worth the effort, and now we can't even sell them."

Helium was founded in 2013 by Shawn Fanning, the cofounder of Napster, and Amir Haleem under the somewhat ominous name of Skynet Phase 1. Initially there was no crypto element to the project and, despite drawing VC investment, it struggled to get off the ground. In 2019 its founders hit on the idea of using blockchain tokenization to incentivize participation in the network. In principle, anybody can purchase a Helium hot spot for \$400 to \$500, plug it into an internet connection and power source, and become a node. In return, the user receives Helium's native HNT tokens, which can be traded on the open market.



It was initially lauded as one of the few crypto projects with a clear utility. More devices were becoming connected to the internet, and Helium was going to be the infrastructure for them. It would tell farmers when to irrigate their fields, help track down stolen e-scooters, and keep track of urban air quality. It was even going to find your dog when it got lost. In early 2022 *The New York Times* ran a piece about Helium with the headline "[Maybe There's a Use for Crypto After All](#)."

Where other cryptocurrencies derived their value mostly from market forces—they were worth whatever someone would pay for them—Helium was going to be able to sell access to its network to companies needing to use the infrastructure, giving it a more predictable and robust source of income. "As usage grows across networks, the value of the HNT ecosystem increases," Helium's chief operating officer, Frank Mong, wrote in a September 2022 blog post.

Helium did not respond to a request for comment.

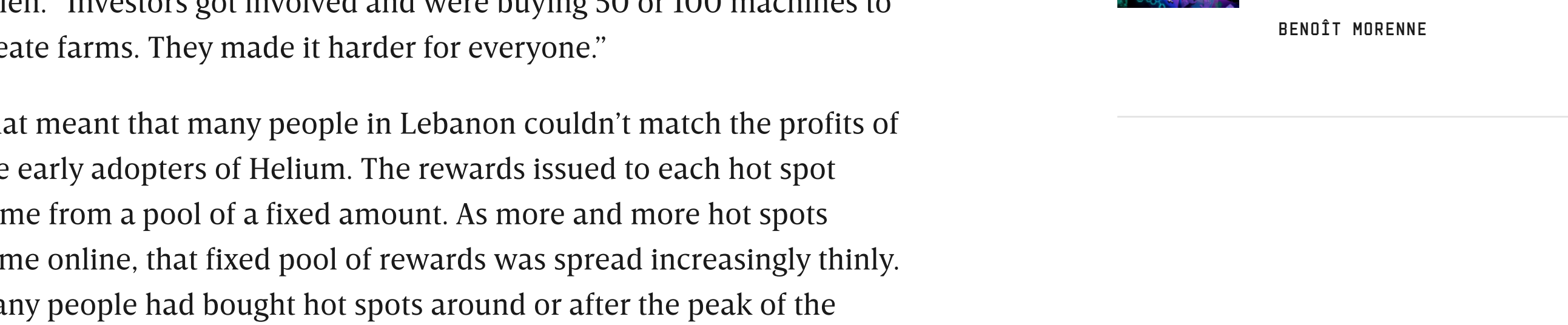
Moe Saleh, who ran several hot spots in Lebanon and helped many others install and configure theirs, says he was attracted to Helium because he "saw that this project had a physical, technical aspect. Not like other crypto projects."

During the 2021 crypto bull market, HNT reached a high of \$50 per token, and hot spot operators could expect to receive more than decent returns. Abu Daher, who claims to have programmed over a thousand Helium hot spots for Lebanese clients, says that at the time a properly installed hot spot returned around \$50 per day. The \$500 cost of the machine could be quickly recouped, then it would start providing a healthy dollarized income.

To thousands of Lebanese mired in economic crisis, this was an attractive proposition. Between 2018 and 2022 the Lebanese economy went through a contraction that the World Bank called one of the "worst economic crises globally since the mid-19th century." One statistic captures the profound effect this had on the average Lebanese citizen: In 2018, 18 percent of [Lebanese households earned less than \\$400 per month](#), just three years later that figure stood at 92 percent. Hyperinflation ravaged the Lebanese lira, destroying over 95 percent of its value. The banks imposed draconian capital controls, leaving clients to watch their life savings evaporate as the lira spiraled. The state shriveled and withdrew from most people's lives. Traffic lights stopped working, making every junction on Lebanon's already dicey roads a hair-raising dash. The national grid delivered, at best, one hour of power per day. The value of police and military monthly salaries fell from \$800 to less than \$100, and many stopped turning up to work as the petrol they used to get there cost more than they earned.

"In Lebanon," Saleh says, "any opportunity people see to keep on living, they take it."

The promise of a machine that could be plugged in to generate more revenue than most people in the country could earn was irresistible. Many people took what money they could scrape together and paid the highly elevated black-market prices for hot spots.



Demand for hot spots in Lebanon surged (as it did globally), and the subsequent order backlog meant that some Lebanese customers had to wait up to a year to receive their machines. Secondhand hot spots, or those that enterprising importers had managed to bring in early, sold for several times their value. At God of Mining, Manih says that one of his clients was so desperate to start mining Helium she paid \$6,000 for a hot spot from someone who had simply bought a few in Europe and brought them back in his luggage.

Around the end of 2021, Lebanese customs started to block the importation of hot spots, citing vague concerns about military radio frequencies. The minister of telecommunications did not respond to a request for comment. However, an engineer in the ministry who wished to remain anonymous, as they were not authorized to speak to the media, says that Helium hot spots were banned until "frequency usage conditions were assessed."

This did little to stop importation, and simply made hot spots more expensive. One importer, who wished to remain anonymous, told WIRED, "We get our machines through customs using other channels." Those other channels tended to be expensive.

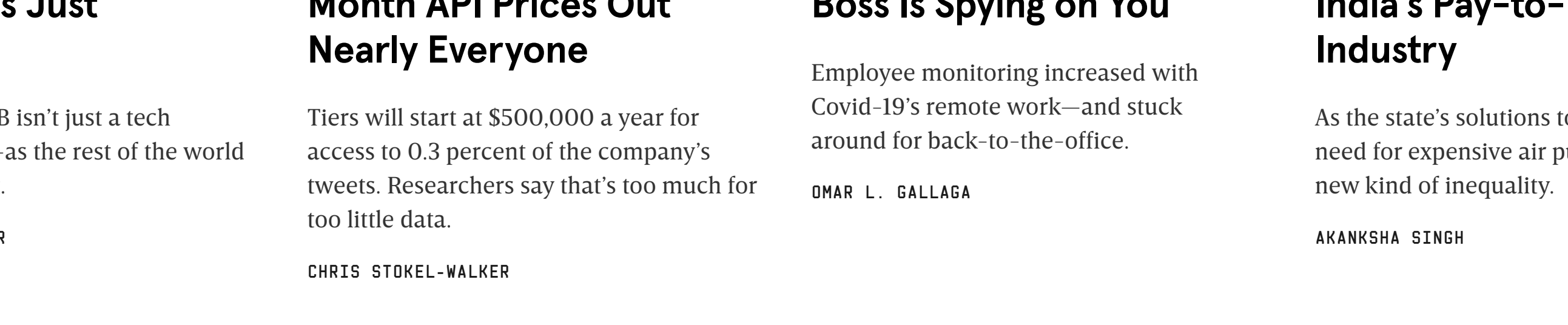
The Helium website says that "mining HNT is done by installing a simple device on your home or office window. That's it. Seriously."

In practice, it's far more complicated. A quick look at any Helium Telegram group or Discord server reveals endless discussion of radio frequencies, IP addresses, firmware updates, and proper location of hot spots. These factors and more will all influence the amount of HNT that a hot spot will mine. "You can do everything perfectly, and it still seems like luck," Manih says. "We tried different cables, IP addresses, types of connection. It's impossible to know what this machine wants."

The complexity of running a hot spot was beyond many of the people who had believed Helium's marketing and thought that they were buying a kind of plug-and-play money printer. Even its popularity was a problem. One of the many factors affecting the profitability of hot spots is their density in a given area. Too few means less return. Too many also means less return. "All kinds of people were buying," said Saleh. "Investors got involved and were buying 50 or 100 machines to create farms. They made it harder for everyone."

That meant that many people in Lebanon couldn't match the profits of the early adopters of Helium. The rewards issued to each hot spot came from a pool of a fixed amount. As more and more hot spots came online, that fixed pool of rewards was spread increasingly thinly. Many people had bought hot spots around or after the peak of the crypto bull market, getting them online as the price of HNT declined alongside the rest of the crypto market. From a bull market high of \$50 per token in 2021, HNT fell to less than \$3.

The network isn't generating much revenue for Helium either. In January, Helium's total demand-side revenue (i.e., the fees paid by companies to actually use the network) amounted to just under \$14,000. In September fee revenue was just \$1,150.



The network and token have also [come under increasing criticism](#) for [tokenomics](#) that skew heavily in favor of insiders. In the early stages of the project, Helium staff and their associates reportedly amassed more than a quarter of all HNT tokens mined, leaving them with a huge windfall, even as rewards declined for new users.

The break-even period on hot spots, previously measured in weeks, is now measured in years. Marcel Younes, who tried running a couple of hot spots despite some initial skepticism, sums up the feelings of many hot spot owners. "It's an obvious scam," he says. "Only created to enrich the initial investors." He has since disconnected his machines, judging them to be not worth the very small amount of electricity they were consuming.

Some people are still clinging to hope that their investments will recover. Although it's going to be many years before a Helium-enabled drone is delivering any burritos in Beirut—if it ever does—Saleh says he still has some belief in the project: "If it isn't Helium that manages to create this network, somebody else will." And he says there is even still some demand for hot spots, although this is mostly because "the secondary market has become so cheap. You can get one for \$100 now."

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